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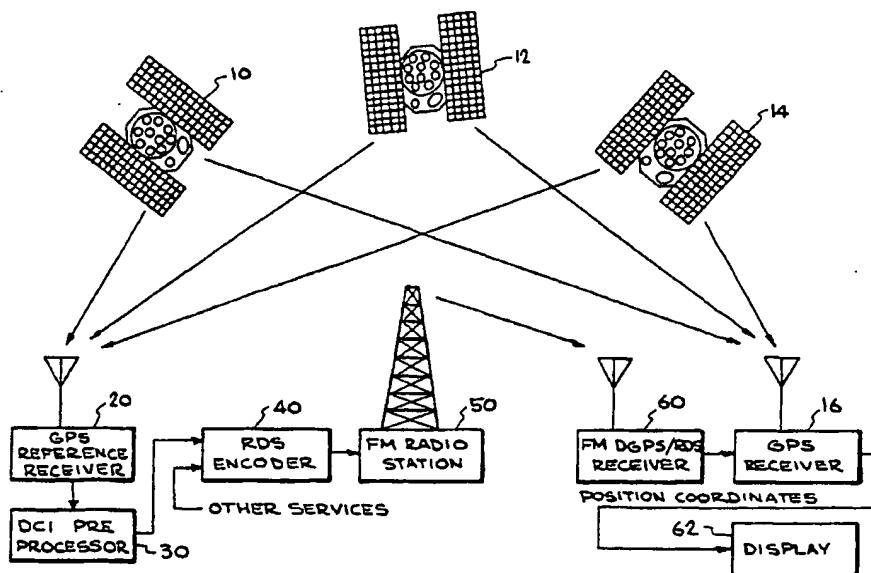
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| (71) Applicant: DIFFERENTIAL CORRECTIONS, INC. [US/US];<br>20045 Stevens Creek Boulevard #24, Cupertino, CA 95014 (US).  |  |   |   |
| (72) Inventors: TIWARI, Anil; 2729 Waverley Street, Palo Alto, CA 94306 (US). WEBER, Lynn; 12885 Pierce Road, Saratoga, CA 95070 (US). HALEY, Ronald, P.; 25390 La Rena Lane, Los Altos Hill, CA 94022 (US). |  |   |   |
| (74) Agent: KING, Patrick, T.; Law Offices of Patrick T. King, 32 Seascap Village, Aptos, CA 95003 (US).   |  |   |   |

(54) Title: DIFFERENTIAL GLOBAL POSITIONING SYSTEM USING RADIO DATA SYSTEM

(57) Abstract

Differential correction signals for a global positioning system (GPS), which operates with signals from a plurality of orbiting satellites (10-14), are provided in a first standard format, such as a RTCM SC-104 format, for each satellite in view of a reference receiver station. The differential correction signals include range error correction signals and range rate error correction information. The differential correction signals are then encoded according to a second standard format, such as the RDS format. The transmission time of the signals in the second standard format are then prioritized. A broadcast FM transmitter (50), is then modulated by the prioritized signals in the second standard format and a receiver (60) receives and demodulates the broadcast signal. The broadcast prioritized signals in the second standard format are then decoded to provide differential correction signals in the first standard format. Various prioritization schemes are provided such as: prioritizing according to the maximum range acceleration rate for the various satellites; prioritizing according to the range acceleration rate for the various satellites exceeding a predetermined absolute value; prioritizing according to range error correction signals exceeding a predetermined absolute value; and prioritizing according to the range error or acceleration corrections signals for the various satellites. In addition to prioritizing, the RTCM signals is compressed and a 1/8 minute time clock is used to simplify processing at a user receiver.



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